Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Cancelled).

2. (Cancelled).

3. (Cancelled).

4. (Currently Amended) A method for processing a plurality of audio input signals into a plurality of audio output signals, the plurality of audio input signals comprising n signals, the plurality of audio output signals comprising m signals, where m>n, comprising:

producing ~~a plurality of~~ n initial low frequency input signals that comprise portions of the ~~plurality of~~ n audio input signals that are at most about a cut-off frequency;

producing at least one additional low frequency input signal from the n initial low frequency input signals;

producing ~~a plurality of~~ n high frequency input signals that comprises portions of the ~~plurality of~~ n audio input signals that are at least about the cut-off frequency;

decoding the ~~plurality of~~ n high frequency input signals into ~~a plurality of~~ m high frequency output signals according to a matrix decoding technique;

bypassing decoding of the ~~plurality of~~ n low frequency input signals and the additional low frequency input signal by any matrix decoding technique; and

maintaining each of the ~~plurality of~~ n low frequency input signals and the additional low frequency input signal separately from each other, where the ~~plurality of~~ m high frequency output signals, [[and]] the ~~plurality of~~ n low frequency input signals, and the additional low frequency input signal are included in the plurality of audio output signals.

5. (Previously Presented) The method of Claim 4, where the cut-off frequency comprises a frequency from about 100Hz to about 1000Hz.

6. (Previously Presented) The method of Claim 4, further comprising customizing the plurality of audio output signals for a listening environment.

7. (Currently Amended) The method of Claim 4, where decoding the ~~plurality of~~ n high frequency input signals into the ~~plurality of~~ m high frequency output signals further comprises producing at least one additional high frequency output signal.

8. (Previously Presented) A method for processing a plurality of audio input signals into a plurality of audio output signals, comprising:

producing a plurality of low frequency input signals that comprise portions of the plurality of audio input signals that are at most about a cut-off frequency;

producing a plurality of high frequency input signals that comprises portions of the plurality of audio input signals that are at least about the cut-off frequency;

decoding the plurality of high frequency input signals into a plurality of high frequency output signals according to a matrix decoding technique;

bypassing decoding of the plurality of low frequency input signals by any matrix decoding technique; and

maintaining each of the plurality of low frequency input signals separately from each other, where the plurality of high frequency output signals and the plurality of low frequency input signals are included in the plurality of audio output signals,

where decoding the plurality of high frequency input signals into the plurality of high frequency output signals further comprises producing at least one additional high frequency output signal, and

where producing at least one additional high frequency output signal comprises combining the plurality of low frequency input signals with the plurality of high frequency output signals.

9. (Currently Amended) The method of Claim 4, where producing the ~~plurality of~~ n initial low frequency input signals comprises removing frequencies that are above about the cut-off frequency from ~~at least one~~ each of the ~~plurality of~~ n audio input signals.

10. (Previously Presented) A method for processing a plurality of audio input signals into a plurality of audio output signals, comprising:

producing a plurality of low frequency input signals that comprise portions of the plurality of audio input signals that are at most about a cut-off frequency;

producing a plurality of high frequency input signals that comprises portions of the plurality of audio input signals that are at least about the cut-off frequency;

decoding the plurality of high frequency input signals into a plurality of high frequency output signals according to a matrix decoding technique;

bypassing decoding of the plurality of low frequency input signals by any matrix decoding technique; and

maintaining each of the plurality of low frequency input signals separately from each other, where the plurality of high frequency output signals and the plurality of low frequency input signals are included in the plurality of audio output signals,

where producing the plurality of low frequency input signals comprises:

removing frequencies that are above about the cut-off frequency from at least one of the plurality of audio input signals;

producing an initial plurality of low frequency input signals; and

producing the plurality of low frequency input signals as a function of the initial low frequency input signals.

11. (Canceled)

12. (Currently Amended) The method of Claim [[11]]4, where producing the ~~further low frequency input signal~~ additional low frequency input signal comprises producing ~~the further low frequency input signal~~ an additional m-n low frequency input signals as a function of the ~~plurality of~~ n initial low frequency input signals.

13. (Currently Amended) The method of Claim 12, where the ~~plurality of~~ n initial low frequency input signals comprises a low frequency effects signal, and producing the ~~further low frequency input signal~~ additional m-n low frequency input signals further comprises producing the ~~further low frequency input signal~~ at least one of the additional m-n low frequency input signals as a function of the low frequency effects signal.

14. (Currently Amended) The method of Claim 13, where producing the ~~further low frequency input signal~~ additional m-n low frequency input signals further comprises applying a gain to the low frequency effects signal.

15. (Canceled)

16. (Canceled)

17. (Previously Presented) A method for processing a left-front input signal, a right-front input signal, a center audio input signal, a left-surround input signal, and a right-surround input signal into a left-front output signal, a right-front output signal, a center output signal, a left-side output signal, a right-side output signal, a left-rear output signal, and a right-rear output signal, the method comprising:

producing an initial left-front low frequency input signal, an initial right-front low frequency input signal, an initial center low frequency input signal, an initial left-surround low frequency input signal, and an initial right-surround low frequency input signal by removing frequencies that are above about a cut-off frequency from the left-front, right-front, center, left-surround, and right-surround input signals, respectively;

producing a left-front low frequency input signal, a right-front low frequency input signal, a center low frequency input signal, a left-side low frequency input signal, a right-side low frequency input signal, a left-rear low frequency input signal, and a right-rear low frequency input signal as a function of the initial left-front, initial right-front, initial center, initial left-surround, and initial right-surround low frequency input signals;

producing a left-front high frequency input signal, a right-front high frequency input signal, a center high frequency input signal, a left-surround high frequency input signal and a right-surround high frequency input signal by removing frequencies that are below about the cut-off frequency from the left-front, right-front, center, left-surround, and right-surround input signals, respectively;

decoding the left-front, right-front, center, left-surround, and right-surround high frequency input signals into a left-front high frequency output signal, a right-front high frequency output signal, a center high frequency output signal, a left-side high frequency output signal, a right-side high frequency output signal, a left-rear high frequency output signal, and a right-rear high frequency output signal according to a matrix decoding technique;

causing the left-front, right-front, center, left-side, right-side, left-rear, and right-rear low frequency input signals to forgo the matrix decoding technique; and

maintaining each of the left-front, right-front, center, left-side, right-side, left-rear, and right-rear low frequency input signals separately from each other, where left-front, right-front, center, left-side, right-side, left-rear, and right-rear low frequency input signals, and the left-front, right-front, center, left-side, right-side, left-rear, and right-rear high frequency output signals comprise the left-front, right-front, center, left-side, right-side, left-rear and right-rear output signals.

18. (Previously Presented) A method for processing a plurality of audio input signals into a plurality of audio output signals, comprising:

producing a plurality of low frequency input signals that comprise portions of the plurality of audio input signals that are at most about a cut-off frequency;

producing a plurality of high frequency input signals that comprises portions of the plurality of audio input signals that are at least about the cut-off frequency;

decoding the plurality of high frequency input signals into a plurality of high frequency output signals according to a matrix decoding technique;

bypassing decoding of the plurality of low frequency input signals by any matrix decoding technique; and

maintaining each of the plurality of low frequency input signals separately from each other, where the plurality of high frequency output signals and the plurality of low frequency input signals are included in the plurality of audio output signals,

where the method for processing the plurality of audio input signals into a plurality of audio output signals comprises processing a left-front input signal, and a right-front input signal into a left-front output signal, a right-front, center output signal, a left-surround output signal, and a right-surround output signal;

producing the plurality of low frequency input signals comprises producing a left-front low frequency input signal, and a right-front low frequency input signal by removing frequencies that are above about the cut-off frequency from the left-front, and right-front, input signals, respectively; and producing a further low frequency input signal as a function of the left-front, and right-front low frequency input signals;

producing the plurality of high frequency input signals comprises producing a left-front high frequency input signal, and a right-front high frequency input signal by removing frequencies that are below about the cut-off frequency from the left-front, and right-front input signals, respectively;

decoding the plurality of high frequency input signals comprises decoding the left-front, and right-front high frequency input signals into a left-front high frequency output signal, a right-front high frequency output signal, a center high frequency output signal, a left-surround high frequency output signal, and a right-surround high frequency output signal according to the matrix decoding technique;

communicating the plurality of low frequency input signals comprises communicating the left-front, right-front, and further low frequency input signals so as to bypass any decoding by the matrix decoding technique; and

maintaining each of the plurality of low frequency input signals separately from each other comprises maintaining each of the left-front, right-front, and further low frequency input signals separately from each other.

19. (Previously Presented) The method of Claim 18, further comprising producing at least one more high frequency input signal, at least one more left-side high frequency output signal, and at least one more right-side high frequency output signal as a function of the center, left-side, right-side, left-rear, and right-rear high frequency output signals.

20. (Previously Presented) The method of Claim 19, further comprising combining the center, second center, third center, second left-side, and second right-side high frequency output signals, with the center, left-side, right-side, left-rear, and right-rear low frequency input signals include in a second center output signal, a third center output signal, a second left-side output signal, and a second right-side output signal.

21. (Currently Amended) A system for processing a plurality of audio input signals into a plurality of audio output signals, the plurality of audio input signals comprising n signals, the plurality of audio output signals comprising m signals, where m>n, comprising:

a bass management module in communication with the plurality of audio input signals configured to produce ~~a plurality of~~ n initial low frequency input signals comprising portions of the plurality of audio input signals that are at most about a cut-off frequency, produce at least one additional low frequency input signal from at least one of the n initial low frequency input signals, and produce ~~a plurality of~~ n high frequency input signals comprising portions of the plurality of audio input signals that are at least about the cut-off frequency;

a matrix decoder module in communication with the bass management module and configured to decode the ~~plurality of~~ n high frequency input signals into ~~a plurality of~~ m high frequency output signals; and

a plurality of low frequency input channels in communication with the bass management module, configured to separately communicate each of the ~~plurality of~~ n initial low frequency input signals and the additional low frequency input signal, and bypass any matrix decoder module, where the ~~plurality of~~ n initial low frequency input signals, the additional m-n low

frequency input signal, and the ~~plurality of~~ m high frequency output signals comprise the plurality of audio output signals.

22. (Previously Presented) The system of Claim 21, where the cut-off frequency comprises a frequency from about 100Hz to about 1000Hz.

23. (Previously Presented) The system of Claim 21, further comprising an adjustment module in communication with the plurality of audio output signals and configured to customize the plurality of audio output signals for a listening environment.

24. (Currently Amended) The system of Claim 21, where the matrix decoder comprises a mixer configured to produce at least one additional high frequency output signal, whereby the ~~plurality of~~ m high frequency output signals include the additional high frequency output signals.

25. (Canceled)

26. (Currently Amended) The system of Claim 21, where the bass management module comprises a low-pass filter comprising the cut-off frequency, in communication with the plurality of audio input signals, and configured to produce ~~a plurality of~~ n initial low frequency input signals.

27. (Previously Presented) The system of Claim 26, where the plurality of audio input signals comprises a left-surround input signal, the low-pass filter is in communication with the left-surround input signal and configured to produce an initial left-surround low frequency input signal.

28. (Previously Presented) A system for processing a plurality of audio input signals into a plurality of audio output signals, comprising:

a bass management module in communication with the plurality of audio input signals configured to produce a plurality of low frequency input signals comprising portions of the plurality of audio input signals that are at most about a cut-off frequency, and produce a plurality of high frequency input signals comprising portions of the plurality of audio input signals that are at least about the cut-off frequency;

a matrix decoder module in communication with the bass management module and configured to decode the plurality of high frequency input signals into a plurality of high frequency output signals; and

a plurality of low frequency input channels in communication with the bass management module, configured to separately communicate each of the plurality of low frequency input

signals, and bypass the matrix decoder module, where the plurality of low frequency input signals and the plurality of high frequency output signals comprise the plurality of audio output signals,

where the bass management module comprises a low-pass filter comprising the cut-off frequency, in communication with the plurality of audio input signals, and configured to produce a plurality of initial low frequency input signals, and

where the bass management module further comprises a summation device in communication with the low-pass filter, and configured to produce one of the plurality of low frequency input signals from a subset of the plurality of initial low frequency input signals.

29. (Previously Presented) A system for processing a plurality of audio input signals into a plurality of audio output signals, comprising:

a bass management module in communication with the plurality of audio input signals configured to produce a plurality of low frequency input signals comprising portions of the plurality of audio input signals that are at most about a cut-off frequency, and produce a plurality of high frequency input signals comprising portions of the plurality of audio input signals that are at least about the cut-off frequency;

a matrix decoder module in communication with the bass management module and configured to decode the plurality of high frequency input signals into a plurality of high frequency output signals; and

a plurality of low frequency input channels in communication with the bass management module, configured to separately communicate each of the plurality of low frequency input signals, and bypass the matrix decoder module, where the plurality of low frequency input signals and the plurality of high frequency output signals comprise the plurality of audio output signals,

where the bass management module comprises a low-pass filter comprising the cut-off frequency, in communication with the plurality of audio input signals, and configured to produce a plurality of initial low frequency input signals, and

where the plurality of audio input signals comprises a left-front input signal, a right-front input signal, and the low pass filter produces an initial left-front low frequency input signal, an initial right-front low frequency input signal, an initial center low frequency input signal, an

initial left-surround low frequency input signal and an initial right-surround low frequency input signal, and the bass management system further comprises:

a first summation device in communication with and configured to produce a left-front low frequency input signal from the initial left-front, and initial center low-frequency input signals;

a second summation device in communication with and configured to produce a right-front low frequency input signal from the initial right-front and initial center low-frequency input signals;

a third summation device in communication with and configured to produce a left-side low frequency input signal from the initial left-front, initial right-front, and initial left-surround low frequency input signals; and

a fourth summation device in communication with and configured to produce the a right-side low frequency input signal from the initial left-front, initial right-front, and initial right-surround low frequency input signals.

30. (Currently Amended) The system of Claim 21, where the ~~bass management module further comprises a further summation device in communication with and configured to produce a further low frequency input signal~~ additional m-n low frequency input signals are produced from at least some of the ~~plurality of~~ n initial low-frequency input signals.

31. (Currently Amended) The system of Claim 30, where the plurality of audio input signals comprises a low-frequency effects signal, and where the ~~further summation device is in communication with the low-frequency effects signal and configured to produce the additional low-frequency input signal~~ at least one of the additional m-n low frequency input signals are produced from the ~~plurality of low-frequency input signals~~ low-frequency effects signal.

32. (Canceled)

33. (Currently Amended) The system of Claim 21, where the bass management module comprises a high-pass filter including the cut-off frequency, is in communication with the plurality of audio input signals, and is configured to produce the ~~plurality of~~ n high frequency input signals.

34. (Currently Amended) The system of Claim 21, further comprising a mixer in communication with the ~~plurality of~~ n initial low frequency input signals, the additional m-n low frequency input signals, and the ~~plurality of~~ m high frequency output signals, and is configured

to combine the ~~plurality of~~ n initial low frequency input signals and the additional m-n low frequency input signals with the ~~plurality of~~ m high frequency output signals.

35. (Previously Presented) A system for processing a plurality of audio input signals into a plurality of audio output signals, comprising:

a bass management module in communication with the plurality of audio input signals configured to produce a plurality of low frequency input signals comprising portions of the plurality of audio input signals that are at most about a cut-off frequency, and produce a plurality of high frequency input signals comprising portions of the plurality of audio input signals that are at least about the cut-off frequency;

a matrix decoder module in communication with the bass management module and configured to decode the plurality of high frequency input signals into a plurality of high frequency output signals;

a plurality of low frequency input channels in communication with the bass management module, configured to separately communicate each of the plurality of low frequency input signals, and bypass the matrix decoder module, where the plurality of low frequency input signals and the plurality of high frequency output signals comprise the plurality of audio output signals; and

a mixer in communication with the plurality of low frequency input signals and the plurality of high frequency output signals, and is configured to combine the plurality of low frequency input signals with the plurality of high frequency output signals,

where the matrix decoder comprises an adjustment module in communication with at least one of the high frequency output signal and is configured to produce at least one additional high frequency output signal.

36. (Previously Presented) A system for processing a left-front input signal and a right-front input signal into a left-front output signal, a right-front output signal, a center output signal, a left-surround output signal, and a right-surround output signal, the system comprising:

a bass management module in communication with the left-front and right-front, input signals, and comprising:

a low-pass filter in communication with, and configured to filter the left-front and right-front input signals to produce an initial left-front low frequency input signal, and an initial right-front low frequency input signal, respectively;

a first summation device in communication with the low-pass filter, configured to receive the initial left front and center low frequency input signals, and produce a further low frequency input signal; and

a high-pass filter in communication with, and configured to filter the left-front and right-front input signals to produce a left-front high frequency input signal, and a right-front high frequency input signal, respectively;

a matrix decoder module in communication with the bass management module, and configured to decode the left-front, and right-front high frequency input signals into a left-front high frequency output signal, a right-front high frequency output signal, a center high frequency output signal, a left-surround high frequency output signal, and a right-surround high frequency output signal;

a plurality of low frequency input channels in communication with the bass management module, configured to separately communicate each of the left-front and right-front low frequency input signals, and bypassing the matrix decoder module; and

a mixer in communication with the bass management module and the matrix decoder module and configured to produce the left-front, right-front, center, left-surround, and right-surround output signals from the left-front and right front low frequency input signals, and the left-front, right-front, center, left-surround, and right-surround high frequency output signals.

37. (Currently Amended) A vehicular sound processing system, comprising:

a signal source configured to produce a plurality of audio input signals;

a system in communication with the sound source and configured to decode the plurality of audio input signals into a plurality of audio output signals, the plurality of audio input signals comprising n signals, the plurality of audio output signals comprising m signals, where m>n, the system comprising:

a bass management module in communication with the plurality of audio input signals, configured to produce ~~a plurality of~~ n initial low frequency input signals comprising portions of the plurality of audio input signals that are at most about a cut-off frequency, an additional m-n low frequency input signals from the n initial low frequency input signals, and ~~a plurality of~~ n high frequency input signals comprising portions of the plurality of audio input signals that are at least about the cut-off frequency;

at least one matrix decoder module in communication with the bass management module and configured to decode the ~~plurality of~~ n high frequency input signals into ~~a plurality of~~ m high frequency output signals;

a plurality of low frequency input channels in communication with the bass management module configured to separately communicate each of the ~~plurality of~~ n initial low frequency input signals and the additional m-n low frequency input signals, and bypass any matrix decoder module, where the ~~plurality of~~ n initial low frequency input signals, the additional m-n low frequency input signals, and the ~~plurality of~~ m high frequency output signals comprise the plurality of audio output signals; and

a plurality of speakers in communication with the system and configured to convert the plurality of output signals into a plurality of sound waves.

38. (Currently Amended) A vehicular sound processing system, comprising:

a signal source configured to produce a plurality of audio input signals;

a system in communication with the sound source and configured to decoding the plurality of audio input signals into a plurality of audio output signals, the system comprising:

bass management means for producing ~~a plurality of~~ n initial low-frequency input signals that include portions of the plurality of audio input signals that are at most about a cut-off frequency, an additional m-n low frequency input signals from the n initial low frequency input signals, and ~~a plurality of~~ n high-frequency input signals that include portions of the plurality of audio input signals that are at least about the cut-off frequency;

matrix decoder means for decoding the ~~plurality of~~ n high frequency input signals into ~~a plurality of~~ m high frequency output signals; and

means for separately communicating each of the ~~plurality of~~ n initial low frequency input signals and the additional m-n low frequency input signals, and bypassing any matrix decoder means, where the ~~plurality of~~ n initial low frequency input signals, the additional m-n low frequency input signals, and the ~~plurality of~~ m high frequency output signals comprise the plurality of audio output signals; and

a plurality of speakers in communication with the system, where the plurality of speakers converts the plurality of output signals into a plurality of sound waves.

39. (Currently Amended) A method for processing a plurality of audio input signals into a plurality of audio output signals, the plurality of audio input signals comprising n signals, the plurality of audio output signals comprising m signals, where m>n, the method comprising:

producing at least [[one]] n+1 low frequency input signals that comprises [[a]] portions of at least [[one]] some of the plurality of audio input signals that is at most about a cut-off frequency;

decoding, according to at least one matrix decoding technique, at least a part of the plurality of audio input signals into a plurality of m decoded signals;

bypassing the at least [[one]] n+1 low frequency input signals by any matrix decoding technique; and

generating the plurality of audio output signals based on the plurality of decoded signals and based on the at least [[one]] n+1 low frequency input signals.

40. (Previously Presented) The method of claim 39, where producing comprises producing a plurality of low frequency input signals that comprise portions of the plurality of audio input signals that are at most about a cut-off frequency; and

where bypassing comprises bypassing the plurality of low frequency input signals by any matrix decoding technique.

41. (Currently Amended) The method of claim 40, where a number of the plurality of audio input signals is less than a number of the plurality of low frequency input signals; and

where producing the plurality of low frequency inputs signals comprises:

producing a plurality of initial low frequency input signals that comprise portions of the n audio input signals that are at most about a cut-off frequency; and

producing at least some of the plurality of low frequency input signals as a function of the initial low frequency input signals.

42. (Previously Presented) The method of claim 41, where the function comprises a summation.

43. (Previously Presented) The method of claim 40, where a number of the plurality of initial low frequency input signals equals the number of the plurality of input signals;

where the plurality of initial low frequency input signals is generated by filtering the plurality of input signals; and

where at least one of the plurality of low frequency input signals is produced as a function of the initial low frequency input signals and a remainder of the plurality of low frequency input signals are identical to the initial low frequency input signals.

44. (Currently Amended) ~~The method of claim 39,~~ A method for processing a plurality of audio input signals into a plurality of audio output signals, the method comprising:

producing at least one low frequency input signal that comprises a portion of at least one of the plurality of audio input signals that is at most about a cut-off frequency;

decoding, according to at least one matrix decoding technique, at least a part of the plurality of audio input signals into a plurality of decoded signals;

bypassing the at least one low frequency input signal by any matrix decoding technique; and

generating the plurality of audio output signals based on the plurality of decoded signals and based on the at least one low frequency input signal,

where decoding comprises decoding from a lesser number of input signals to a greater number of decoded signals;

where a number of low frequency input signals is equal to the number of decoded signals;

where each of the plurality of low frequency input signals are maintained separately from each other; and

where the low frequency input signals are combined with corresponding decoded signals to generate the plurality of audio output signals.

45. (Previously Presented) The method of claim 39, where decoding comprises decoding from a lesser number of input signals to a greater number of decoded signals;

where a number of low frequency input signals is less than the number of decoded signals; and

where each of the plurality of low frequency input signals are maintained separately from each other; and

where the low frequency input signals are combined with some of the corresponding decoded signals to generate some of the plurality of audio output signals.

46. (Previously Presented) The method of claim 39, further comprising producing a plurality of high frequency input signals that comprises portions of the plurality of audio input signals that are at least about the cut-off frequency; and

where decoding comprises decoding the plurality of high frequency input signals to generate the plurality of decoded signals.

47. (Currently Amended) A method for processing a plurality of audio input signals into a plurality of audio output signals, the plurality of audio input signals comprising n signals, the plurality of audio output signals comprising m signals, where m>n, the method comprising:

producing an initial plurality of low frequency input signals by removing frequencies that are above about the cut-off frequency from at least some of the plurality of audio input signals;

producing ~~a plurality of~~ at least one low frequency input ~~signals~~ signal as a function of the initial low frequency input signals such as the at least one low frequency input signal and the initial plurality of low frequency input signals comprises at least n+1 low frequency signals;

decoding, according to at least one matrix decoding technique, at least a part of the plurality of audio input signals into a plurality of decoded signals;

bypassing the ~~plurality of~~ at least one low frequency input ~~signals~~ signal and the initial plurality of low frequency input signals by the matrix decoding technique; and

generating the plurality of audio output signals based on the plurality of decoded signals and based on the ~~plurality of~~ at least one low frequency input ~~signals~~ signal and at least one of the initial plurality of low frequency input signals.

48. (Previously Presented) The method of claim 47, where producing a plurality of low frequency input signals as a function of the initial low frequency input signals comprising summing at least two of the initial plurality of low frequency input signals.

49. (Currently Amended) ~~The method of claim 48,~~ A method for processing a plurality of audio input signals into a plurality of audio output signals, the method comprising:

producing an initial plurality of low frequency input signals by removing frequencies that are above about the cut-off frequency from at least some of the plurality of audio input signals;

producing a plurality of low frequency input signals as a function of the initial low frequency input signals;

decoding, according to at least one matrix decoding technique, at least a part of the plurality of audio input signals into a plurality of decoded signals;

bypassing the plurality of low frequency input signals by the matrix decoding technique; and

generating the plurality of audio output signals based on the plurality of decoded signals and based on the plurality of low frequency input signals,

where one of the plurality of low frequency input signals includes a SUB signal comprising a summation of all of the initial low frequency input signals.

50. (Currently Amended) A vehicular sound processing system, comprising:

a signal source configured to produce a plurality of audio input signals;

a system in communication with the sound source and configured to decode the plurality of audio input signals into a plurality of audio output signals, the plurality of audio input signals comprising n signals, the plurality of audio output signals comprising m signals, where m>n, the system comprising:

a bass management module in communication with the plurality of audio input signals, configured to produce at least [[one]] n+1 low frequency input signals that comprises a portion of at least [[one]] some of the plurality of audio input signals that is at most about a cut-off frequency;

at least one matrix decoder module in communication with the bass management module and configured to decode at least a part of the plurality of audio input signals into ~~a plurality of~~ m decoded signals; and

at least [[one]] n+1 low frequency input channels in communication with the bass management module configured to bypass the at least [[one]] n+1 low frequency input signals from any matrix decoder module, where the at least [[one]] n+1 low frequency input signals and the plurality of decoded signals comprise the plurality of audio output signals; and

a plurality of speakers in communication with the system and configured to convert the plurality of audio output signals into a plurality of sound waves.

51. (Currently Amended) The vehicular sound processing system of claim 50, where the bass management module is configured to produce a plurality of low frequency input signals that comprise portions of the plurality of audio input signals that are at most about a cut-off frequency; and

where the at least [[one]] n+1 low frequency input channels comprises a plurality of low frequency input channels configured to bypass the plurality of low frequency input signals by any matrix decoding technique.

52. (Currently Amended) The vehicular sound processing system of claim 51, where a number of the plurality of audio input signals is less than a number of the plurality of low frequency input signals; and

where the bass management module is configured to produce the plurality of low frequency inputs signals by producing a plurality of initial low frequency input signals that comprise portions of the n audio input signals that are at most about a cut-off frequency; and producing at least some of the plurality of low frequency input signals as a function of the initial low frequency input signals.

53. (Previously Presented) The vehicular sound processing system of claim 52, where the function comprises a summation.

54. (Previously Presented) The vehicular sound processing system of claim 51, where a number of the plurality of initial low frequency input signals equals a number of the plurality of input signals;

where the plurality of initial low frequency input signals is generated by filtering the plurality of input signals; and

where at least one of the plurality of low frequency input signals is produced as function of the initial low frequency input signals and a remainder of the plurality of low frequency input signals are identical to the initial low frequency input signals.

55. (Currently Amended) ~~The vehicular sound processing system of claim 50,~~ A vehicular sound processing system, comprising:

a signal source configured to produce a plurality of audio input signals;

a system in communication with the sound source and configured to decode the plurality of audio input signals into a plurality of audio output signals, the system comprising:

a bass management module in communication with the plurality of audio input signals, configured to produce at least one low frequency input signal that comprises a portion of at least one of the plurality of audio input signals that is at most about a cut-off frequency;

at least one matrix decoder module in communication with the bass management module and configured to decode at least a part of the plurality of audio input signals into a plurality of decoded signals; and

at least one low frequency input channel in communication with the bass management module configured to bypass the at least one low frequency input signal from any matrix decoder module, where the at least one low frequency input signal and the plurality of decoded signals comprise the plurality of audio output signals; and

a plurality of speakers in communication with the system and configured to convert the plurality of audio output signals into a plurality of sound waves,

where the matrix decoder is configured to decode from a lesser number of input signals to a greater number of decoded signals;

where the number of low frequency input signals is equal to the number of decoded signals;

where each of the plurality of low frequency input signals are maintained separately from each other; and

where the low frequency input signals are combined with corresponding decoded signals to generate the plurality of audio output signals.

56. (Currently Amended) The vehicular sound processing system of claim 50, ~~where the matrix decoder is configured to decode from a lesser number of input signals to a greater number of decoded signals;~~

where the number of low frequency input signals is less than the number of decoded signals; and

where each of the plurality of low frequency input signals are maintained separately from each other; and

where the low frequency input signals are combined with some of the corresponding decoded signals to generate some of the plurality of audio output signals.

57. (Previously Presented) The vehicular sound processing system of claim 50, further comprising producing a plurality of high frequency input signals that comprises portions of the plurality of audio input signals that are at least about the cut-off frequency; and

where decoding comprises decoding the plurality of high frequency input signals to generate the plurality of decoded signals.

58. (Currently Amended) A vehicular sound processing system, comprising:

a signal source configured to produce a plurality of audio input signals, the plurality of audio input signals comprising n signals;

a system in communication with the sound source and configured to decode the plurality of audio input signals into a plurality of audio output signals, the plurality of audio output signals comprising m signals, where m>n, the system comprising:

a bass management module in communication with the plurality of audio input signals, configured to produce [[an]] n initial ~~plurality of~~ low frequency input signals by removing frequencies that are above about the cut-off frequency from at least some of the plurality of audio input signals and to produce ~~a plurality of~~ m-n low frequency input signals as a function of the initial low frequency input signals;

at least one matrix decoder module in communication with the bass management module and configured to decode at least a part of the plurality of audio input signals into ~~a plurality of~~ m decoded signals; and

a plurality of low frequency input channels in communication with the bass management module configured to bypass the ~~at least one~~ n initial low frequency input signals and the m-n low frequency input signals from any matrix decoder module, where the ~~at least one~~ n initial one low frequency input signals, the m-n low frequency input signals, and the plurality of decoded signals comprise the plurality of audio output signals; and

a plurality of speakers in communication with the system and configured to convert the plurality of audio output signals into a plurality of sound waves.